

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

CROSS WIND STRIPCROPPING

(acre)
CODE 589B

DEFINITION

Growing crops in strips established across the prevailing wind erosion direction, and arranged so that strips susceptible to wind erosion are alternated with strips having a protective cover that is resistant to wind erosion.

PURPOSE

This practice may be applied as part of a conservation management system to support one or both of the following:

- Reduce soil erosion from wind.
- Protect growing crops from damage by wind-borne soil particles.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to cropland, or other land where crops are grown.

CRITERIA

General Criteria Applicable To All Purposes Named Above

Number of Strips

A cross wind stripcropping system shall consist of at least two strips.

Width and Direction of Strips

Strips having protective cover and managed as part of a crop rotation may be the same width as the erosion-susceptible strips or may be narrower, but in any case shall not be less than 25 feet.

The maximum width of strips, measured perpendicular to strip direction, shall not exceed 660 feet.

When the direction of erosion-susceptible strips deviates from perpendicular to the prevailing wind erosion direction, the width of these strips shall be correspondingly reduced.

Arrangement of Strips

Strips susceptible to wind erosion shall be alternated with strips that provide protective cover.

Crops shall be rotated so that protective cover is maintained in alternate strips during those periods when wind erosion is expected to occur.

Two or more strips having protective cover may be next to each other, but strips susceptible to erosion must be separated by a strip providing protective cover.

Vegetative Cover

Vegetation in a stripcropping arrangement consists of crops grown in a planned rotation.

Alternate strips shall be crops or crop residues, which provide protective cover during those periods when wind erosion is expected to occur.

Acceptable protective cover includes a growing crop, including grasses, legumes, or grass-legume mixtures, standing stubble, or tilled residue with enough surface cover to provide protection.

Additional Criteria to Reduce Soil Erosion from Wind

The effective width of strips shall be measured along the prevailing wind erosion direction for those periods when wind erosion is expected to occur and for which the system is designed.

Strip width shall not exceed that permitted by the soil loss tolerance (T), other planned soil loss objective, or the maximum permissible width specified in this standard.

The width of strips shall be determined using current approved wind erosion prediction technology. Calculations shall account for the effects of other practices in the conservation management system.

Additional Criteria to Protect Growing Crops from Damage By Wind-borne Soil Particles

The effective width shall be measured along the prevailing wind erosion direction during those periods when sensitive crops are susceptible to damage by wind-borne soil particles.

The width of strips shall not exceed the width permitted by the crop tolerance to wind erosion*, as specified in applicable Field Office Technical Guides, other accepted technical references, or other planned crop protection objective.

* Crop tolerance to wind erosion is the maximum rate of soil blowing that the plants can tolerate without significant plant damage due to abrasion, burial, or desiccation.

The width of strips shall be determined using current approved wind erosion prediction technology to estimate wind erosion during specific crop stage periods. Calculations shall account for the effects of other practices in the conservation management system.

CONSIDERATIONS

The effectiveness of Cross Wind Stripcropping is maximized when the strips are oriented as close to perpendicular as possible to the prevailing wind erosion direction for the period for which the system is designed.

Transport of wind-borne sediment and sediment-borne contaminants offsite is reduced by this practice when used in a conservation management system.

Where this practice is used in combination with the practice, **Conservation Crop Rotation** (Code 328), the stripcropping design must be consistent with the crop sequence.

Strip widths may be adjusted, within the limits of the criteria above, to accommodate widths of farm equipment to minimize partial or incomplete passes.

Alternative practices which may be used to separate erosion-susceptible strips include **Cross Wind Trap Strips** (Code 589C), **Herbaceous Wind Barriers** (Code 603), or **Windbreak/Shelterbelt Establishment** (Code 380).

Pesticides used in conjunction with this practice shall be registered and applied in accordance with authorized uses, direction on the label and other Federal, State and local requirements.

Refer to the Field Office Technical Guide, Section V for the practice effect on resource concerns (soil, water, air, plant, animal, and human).

Practice Effects

Soil

Implementation of the practice will result in a reduction in wind erosion, sheet and rill erosion, onsite deposition and deposition damage.

Water

Implementation of this practice will reduce the amount of sediment entering an open water conveyance system or open water bodies.

Air

The airborne sediment will be reduced significantly.

Plant

Crops will be protected from wind damage due to sediment and abrasion due to wind borne soil particles.

Animal

Food and cover will be provided to wildlife, if it is one of the purposes for implementing this practice.

Human

Producer will incur additional cost and time to implement this practice.

PLANS AND SPECIFICATIONS

Site-specific specifications which document the requirements for installing, operating and maintaining the practice on a particular site to achieve its intended purpose(s) shall be prepared in accordance with this standard and the practice specification.

The site-specific specifications shall document the following, as a minimum:

- Orientation and width of the strips.
- Sequence of protected and erosion susceptible strips over the affected area.

The site-specific specifications shall be documented on the NRCS Hawaii Cross Wind Stripcropping Jobsheet and given to the client. Other documents, such as practice worksheets, maps, drawings, and narrative statements in the conservation plan may be used to plan or design the practice and to prepare the site-specific specifications.

OPERATION AND MAINTENANCE

Erosion-resistant strips in rotation shall be managed to maintain the planned vegetative cover and surface roughness during periods when wind erosion is expected to occur.

The protective cover must be adequate to inhibit the initiation of wind erosion and to trap saltating soil particles originating upwind.

Wind-borne sediment accumulated along strip edges shall be removed and distributed over the surface of the field as determined appropriate.